

Technology

Course: Technology 6, 7, 8 and Pinball Elective

Level: Grades 6, 7 and 8

Prerequisite: Math, English

Text: Laboratory Report Handouts

Course Description and Overview: Technology explores math and the physical sciences via theory and hands-on project constructions and designs. Students who successfully complete the technology exploratory courses will gain experience with applying math and basic physical science in a “real world setting.”

Course Objectives: Students will explore by grade the concepts behind the function and construction of the projects listed in the course outlines below.

Writing Requirements: The primary writing requirements, along with listening and observing requirements, are the laboratory reports that students are required to write after they construct, test and collect the necessary data, and the various notes they must take during a lecture period.

Evaluation/Grading Policy: Quarter grades are based on the grade the student receives on his/her lab reports (80%), completion of hands-on construction projects (10%) and class participation (10%).

Course Outlines:

Grade 6 Curriculum:

- 1) Air Boat, 2) Gravity-Powered Car, 3) Rockets, 4) Paper Tower, 5) Rubber-Band Car, 6) Gear-Drive Car, 7) Aircraft/Gliders, 8) Roller Coaster, 9) Catapult

Grade 7 Curriculum:

- 1) Magnetic-Levitation Vehicle, 2) Racing Boat, 3) Sail Boat, 4) Concept Car, 5) Paper Car, 6) Fan-Powered Dragster, 7) Electric Circuits, 8) Hover Craft, 9) Package Design

Grade 8 Curriculum:

- 1) Paper Car Design (2-wheel), 2) CO₂-Powered Dragster, 3) Math/Science Clock, 4) Pulley-Drive Car, 5) Rumbling Robots Design, 6) Paddle Wheel Boat, 7) Lego Robotics, 8) SCANTEK Modules – Alternative Energy – Mechanisms – Construction – Robotics & Automation

Pinball Design & Construction Elective Curriculum:

Students will design and construct a working model of a pinball machine using, wood, motors, gears, levers, springs, paint, lamps, switches, wheels, axles, camshafts, foam, straws, plastic and various types of hardware. Students will start with a paper design process that allows them to plan and prepare for their actual construction. Students will follow a theme based concept and carefully construct the main “box” and begin to paint and add diagrams, photos and pictures to the playfield and back board. Students will then design & construct the “working mechanisms” and add them to the machine.